

**Response to Office Action mailed April 2, 2007**

Examiner: Scott L. Jarrett

Art Unit: 3623

Title: Adaptive Workflow Route

Application Number: 09/929,412

Inventor: Norman Ken Ouchi

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Action is non-Final

Claims 80-99 are pending

Claims 80-99 are rejected.

The inventor sincerely appreciates the assistance and through investigation by the Examiner. His phone calls, discussions, suggestions, and feedback have been invaluable. The patent claims have improved significantly.

Claims 80-81, 83-89, 91-95 and 97-99 are rejected under U.S.C. 35 102(b) as anticipated by Ott, Marcus conceptual Design and Implementation of a Graphical Workflow Modeling Editor in the Context of Distributed Groupware Databases (1994). Claims 82, 90, and 96 are rejected under U.S.C. 35 103(a) as unpatentable over Ott as applied to Claims 80-81, 83-89, 91-95 and 97-99 in view of Ivanov, U.S. Patent 5,706,452.

**Discussion**

In the prior art, the functions to create and execute a workflow route were separated into two distinct and separate phases: the creation of the route and the execution of the route by the workflow. The route creation tools create routes and the workflow executes the route. The prior art workflow does not adapt or alter the route while executing the route. A similar separation exists in the creation and execution of programs where programs with specialized screens are used by programmers to develop a program and the resulting program provides functions and screens quite different from the program development program. The end users of the resulting program are quite different from those of the programmer in that the education, experience, and subject matter are very different for the programmer compared to the end user. The only classes of programs where the programmer and end user overlap are the development of programming tools.

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Even in these cases, the program development program is not used to alter itself while the program is executing.

The present invention discloses a careful overlap of the workflow route creation with the execution of the workflow route such that the route is adapted, actually changed, while the route is executing. The workflow of the present invention provides specific functions to adapt the route suitable for the skills and experience of the end user. The claims have been amended to specifically describe these functions.

The route adaptations are actual changes to the route structure and should not be mistaken for branching in a route that modifies the path of an instance through the route. The prior art provides complex branching capabilities including conditional branches, branches based on weights, parallel sub-routes, etc. However with one exception, all of these branches and sub-routes must be in the route when the route begins execution. The exception is described in the TeamWare Flow 3.1 User's Guide provided by the Examiner, on page 16 in the first paragraph starting on that page, "Process plans can even be modified while being performed, allowing people to start with incomplete plans and complete them as they go." Performing what is described requires great care, attention, and skills as the route must be modified using the route creation tools while the route is executing. The users of the route must be cognizant of the route steps that have been created and what must be modified. The users must be aware of the "end of the world" so they don't fall off the end of the incomplete route. The users must have mastered the features and functions of TeamWARE Flow 3.1 or Ott or similar route creation tools. The User's Guide is 163 pages of programmer level text. Ott is 158 pages of programmer level text. Route creation is not for end users just as program development is not for end users. The users must be very aware of the state of execution of the route since altering route steps that are currently under execution can cause unpredictable results. The significant distinction of the prior art from the present invention is that for the prior art, the changes to the route are performed using the screens and functions provided by TeamWARE Flow 3.1 or Ott or other route creation program while for the present invention the user makes changes using the screens and functions of the workflow as directed by the route under execution to adapt the route. For the prior art, the users are not in the route execution workflow function when adapting the route. The prior art TeamWARE Flow 3.1 or Ott do not provide screens or functions for creating or modifying a route during execution in their library of route creation functions. That is, a designer cannot find in the prior art tools, an "adaptive

node" as disclosed in the present invention to include in a route. The prior art workflow that execute these routes do not provide the "adaptive node" screens or functions. The present invention provides a carefully selected subset of the route creation functions as workflow provided screens and the workflow is augmented to provide these functions such that a route adapting node at a route step is executed by the end user to create the route step for subsequent execution. The route adapting is all within the workflow execution environment and the screens are designed to fit the skill level of the end user and not require the skill level of a route designer. The route designer uses a tool similar to Ott or TeamWARE Flow 3.1 to create the route to be completed during route execution. The route creation tool is augmented to provide the adapting node as one of the possible nodes for a route step. The route designer takes care so that the adapting node is at a route step in the route BEFORE the execution of the route step to be created. This avoids the "end of the world" problem and insures that the sub-route is adapted before it would be executed. The issues and problems encountered by creating partial routes and finishing them while executing are avoided because the route designer provided the appropriate adapting node at a route step in the appropriate position in the route so the end user is not exposed to these hazards.

The adaptive node provides functions similar to a subset of the prior art route creation tools however these differ in that these functions are performed while the route is executing and the functions are provided by the workflow and not the route design tools. The present invention provides selected route adapting functions as route steps and the workflow has been augmented to provide these function so that end users can adapt the route while executing the route.

Copy of Claim 80. (Amended) A method for generating in real-time a workflow route from predefined workflow sub-routes while the route is executing in the workflow, comprising:

defining a route creation function augmented to provide an adaptive node;

defining and storing a set of local sub-routes in a sub-route library wherein each local sub-route comprises a sequence of nodes to perform locally a customer request;

defining a composite route comprising an initial node and a final node;

wherein the initial node is an adaptive node assigned to a key user and

provides a sub-route selection function;

defining a workflow providing the adaptive node for selecting a local sub-route from the sub-route library and inserting a copy of the selected local sub-route into the composite

route and connecting the end of the selected local sub-route to the final node of the composite route;

executing the composite route in the workflow starting at the initial node, the adaptive node, wherein the key user selects an appropriate local sub-route from the sub-route library using the sub-route selection function to process the customer request; the adaptive node automatically modifies the composite route in response to the key user's selection by inserting a copy of the selected local sub-route into the composite route and connecting the end of the selected local sub-route to the final node of the composite route;

executing the selected local sub-route until the composite route's final node is performed.

The independent claims 80, 89, and 95 have been amended to distinctly point out that the route creation function is augmented to provide creation of routes that include the adaptive node, the workflow is augmented to provide the adaptive node screens and functions, and the route is modified by the end user at the adaptive node while the route is executing.

Claims are grouped 80-88, 89-94, and 95-99 where claims 80, 89, and 95 are independent claims.

Respectfully submitted



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